

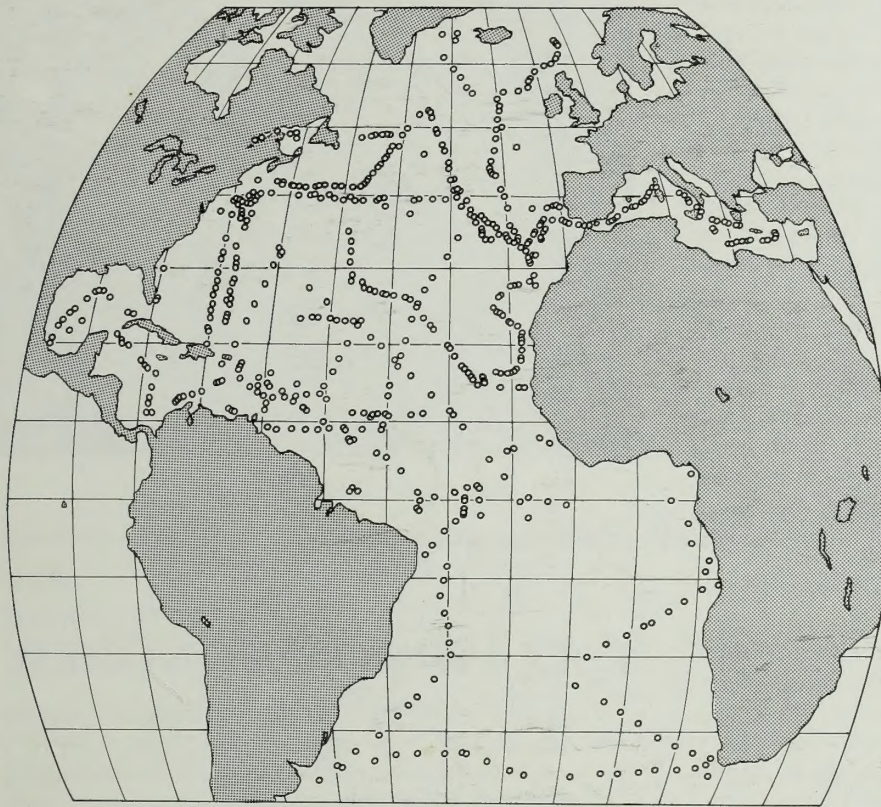


Harvard University
Cambridge, Massachusetts
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Winter, 1978

MCZ newsletter

MUSEUM OF COMPARATIVE ZOOLOGY

FISH DEPARTMENT RECEIVES IMPORTANT COLLECTION



The dots on this map represent the localities from which the fishes in the WHOI collection were taken. The range covers practically the entire Atlantic Ocean, from the Arctic to the Antarctic.

Laszlo Meszoly

A major event in the history of the MCZ Fish Department started this February with the beginning of a three year project to transfer over 300,000 specimens of Atlantic fishes from the Woods Hole Oceanographic Institution (WHOI) to the MCZ. This major collection represents well over 13 years of research by MCZ Research Associates Drs. Richard Backus, James Craddock and Richard Haedrich in almost all areas of the Atlantic Ocean. The addition of this marine fish collection, unparal-

leled in the history of the MCZ, is one of the high points of a long relationship between the MCZ and WHOI started by Dr. Henry Bryant Bigelow and continued by Drs. William Schroeder, Giles Mead, Karel Liem and William Fink.

The current project is made possible by a three year grant from the National Science Foundation co-authored by the MCZ's current ichthyologists, Drs. Liem and Fink, and will provide \$165,200 to integrate the collection into the renovated Fish Department. Accession-

ing of this material would not have been possible without these major renovations, supported by a previous NSF facilities grant (1973-78), which has transformed the MCZ into an excellently equipped research facility currently rated an International Center for Ichthyology by the American Society of Ichthyologists and Herpetologists.

The material being transferred is probably the most important (and extensive) acquisition since Louis Agassiz' initiation of the Thayer and Hassler Expeditions of the mid and late 1800's. All of the specimens have been collected on modern research vessels with fine mesh net and preserved under optimal conditions. In addition, the 40,000 lots of fishes, representing over 100 families, are accompanied by extensive data, most of which is on computer printouts at WHOI.

The fishes have already been studied extensively by the WHOI researchers in their work on Atlantic zoogeography and zonation and by most of the authors of the "Fishes of the Western North Atlantic", a series currently filling seven large volumes, published by the Sears Foundation of Yale University. Volume seven is just off the press and covers the lanternfishes, family Myctophidae. About sixty percent of the fishes which will be transferred belong in this exceptionally rich family and have been used extensively by Drs. Backus and Craddock who are co-authors of the current volume.

This elaborately documented collection, from various ocean depths and habitats, and representing great phyletic diversity, will be a prime source for marine biologists of this and future generations.

EVA JONAS, NEW MCZ LIBRARIAN

Mrs. Eva Stanovska Jonas has been appointed MCZ Librarian as of February 1. With her background in Biology (she received an undergraduate degree in Biology and a master's degree in Library Science from Charles University in her native Czechoslovakia and also holds a master's degree in Cell and Developmental Biology from Harvard), her extensive science library experience, and her urgent concern for the future of the MCZ Library she is ideally suited for her challenging new position.

Mrs. Jonas, who is fluent in five languages, has been reference librarian at Harvard's Cabot Science Library since 1973; she has been an Associate of Adams House since 1975; and she has been involved in individual and course-related instruction of Harvard students on how to use the library effectively, especially those reference tools developed by modern information science. In 1976 Harvard University published her slide tape program on *How to Use Biological Abstracts*. She is also responsible for introducing an analytical hand operated information retrieval system into both the Cell and Developmental Biology Library at Harvard and the Library of the Czechoslovakia Academy of Arts and Sciences.

Mrs. Jonas plans to apply her considerable energy to improving three major areas of the MCZ Library including: a) rearranging the journal holdings, a major project since more than 1900 journals are received by the Library; b) rehousing the rare books in an area equipped with temperature and humidity controls to prevent their deterioration; and c) joining the Library of Congress classification system to update the Library's retrieval capabilities.

Like most institutions, the Library faces two major shortages—space and funds. Space is a constant problem since the historical value of many of the books prevents their being weeded out. Unlike other more modern libraries, a large number of the MCZ's holdings, rather than becoming obsolete, grow more valuable with age. Preserving these rare books is one of the Library's urgent priorities. She hopes that the museum will eventually receive government or foundation grants or find support from individuals interested in



Mrs. Eva S. Jonas

preserving what is actually the museum's most valuable collection—the MCZ Library.

E. O. WILSON HONORED

Professor Edward O. Wilson, Curator in Entomology, has received the National Medal of Science in recognition of his pioneering research into the organization of insect societies and the evolution of social behavior in insects and other animals. He received the award from President Carter on November 22.



A baby elephant's sunburn is a sure sign that mother is missing. This baby's back is greasy from lotion applied by its foster parents, the game wardens of Tzavo National Park, who found it after its mother was presumably killed by poachers. Among other comforts that mother elephants provide is shade from the sun for their offspring's untoughened skin. Professor Charles P. Lyman, Curator of Mammalogy, takes a close look on a visit to Kenya last Spring.

Photo by Ann Taylor

Cambridge, June 8th 1894.

My dear Sir,

I deeply regretted while in Washington to have had so little time with you, as there are several points concerning the Smithsonian about which I want very much to speak to you; but what little I did there was, all I could do as I have even paid severely for it, as ever since I have - guaranteed enough brought about by talking to which I was no longer accustomed. Perhaps I shall have the good fortune of seeing you during the summer, before I sail.

I write today to say that my annual Report of the Museum which has been thus far delayed in consequence of my inability to apply myself, is now ready for distribution; also a Report of Dall upon the Douglas Archipelago; both of which I should like to distribute abroad. And I would ask whether you can forward them through the agency of the Smithsonian, provided I send them to you fully directed I made up in as many parcels as you have agents. I would be much obliged for you answer & direct upon this point, if you could be so kind.

I would have much liked to see Dr. Osbeck to give him some directions concerning glacial phenomena in the Arctic, which all explorers of those regions have thus far totally neglected; but I do not know how to get at him. I wrote to Capt. Hall, to Capt. Patterson & to Dr. Osbeck himself about it; but somehow whatever is fitted out in Washington with reference to science is always awfully kept from me until it is too late for me to take any part in it. This has been so for about twenty years, except in matters in which you had personally a hand. You may easily guess where the shoe pinches.

Ever truly your friend

L. Agassiz

Prof. Jos. Henry
Sec. Smiths. Inst.

HUSBAND AND WIFE VISIT FROM SANTA CRUZ

Dr. Vicki B. Pearse

Dr. Vicki B. Pearse, who received her A.B. and Ph.D. degrees from Stanford University, works on the symbiosis between sea anemones and photosynthetic dinoflagellates (single-celled algae which cause the anemones' response to light) and on calcification by corals and sea urchins when she's in her customary habitat at the University of California at Santa Cruz where she is a research associate. However, during her semester sojourn in Cambridge this Spring she plans to concentrate exclusively on the current family project—the revision of her father, Ralph Buchsbaum's well-known text *Animals Without Backbones* together with her father, mother Mildred Buchsbaum, and husband John Pearse.

The Buchsbaums' retirement from the University of Pittsburgh and subsequent move to central



Dr. Vicki B. Pearse

California had made the joint project feasible and plans are to continue this Spring despite the long-distance telephone calls.

Dr. John S. Pearse

Dr. John S. Pearse, Associate Professor of Biology at the University of California at Santa Cruz and Visiting Associate Professor at the MCZ this Spring, is an invertebrate biologist whose special interest is reproduction in echinoderms. While at the MCZ, Dr. Pearse and Dr. Robert M. Woollacott, Associate Professor of Biology and



Dr. John Pearse at the transmission electron microscope.

Associate Curator of Invertebrates, will teach a course on the reproductive ecology of marine invertebrates. They will also examine sea urchins with both the scanning and transmission electron microscopes in an attempt to explain the mystery of synchronous reproduction in these animals. The aboral nerve ring in sea urchins has not yet been closely studied and Dr. Pearse thinks its function might have bearing on the unknown mechanism which triggers simultaneous reproduction in these echinoderms.

Dr. Pearse's research into echinoderm reproduction has led him to compare populations in several different far-flung study sites. For his Ph.D. (Stanford 1965) research, he spent a year at the McMurdo research station in the Antarctic and concluded that perhaps the synchronous reproduction in this area may be triggered by the spring phytoplankton bloom. Subsequently, his research in the Gulf of Suez, while he was Assistant Professor at the American Univer-

sity in Cairo from 1965 to 1968, led him to conclude that temperature was the main environmental factor involved in synchronizing reproduction in this subtropical area. This line of research requires ample time and patience since most echinoderms have an annual reproductive cycle and the normal cycle has to be observed before experimentation can begin.

Another aspect of echinoderm reproduction, closer to home in central California, has involved Dr. Pearse in an advisory capacity to wildlife managers and conservationists who are concerned about the balance of nature in the central California kelp forests. There are several factors which play an ecological part:

a) The kelp, from which alginic acid is derived, is the basis of a multimillion dollar industry in California; it is used as a stabilizer in many foods, beverages, pharmaceuticals, cosmetics, paint, rubber, ceramics, insecticide sprays, textiles, and paper products.

b) The sea urchins, which are major grazers in the kelp forests and whose populations have greatly increased over recent years.

c) The sea otters, natural sea urchin predators, which were nearly extinct (less than 100 individuals) at the turn of the century and now, with legislated controls, number almost 2,000. The sea otters, however, do not take only sea urchins but also abalones, clams and crabs.

d) The shell fishermen, who are perturbed over the loss of their catch to the sea otters and feel the otter population should be restricted.

Dr. Pearse, who studies this problem at Stanford's Hopkins Marine Station, points out that there are other factors to be taken into account and stresses that a thorough understanding of the entire kelp forest ecology is essential to making enlightened legislative decisions. For one thing, the sea otters live in a very limited 130-mile range from Monterey Bay south to Pismo Beach. The sea urchins outside their range are more numerous than within. A perfect opportunity to document the changes caused by

sea otters present itself this year since they have just arrived in Santa Cruz. The complaints of the shell fishermen against the sea otters do not take into account the

human contribution to this ecological imbalance. The major decline in the abalone catches, for example, have been outside the range of the sea otters, and has probably re-

sulted from heavy fishing pressure.

Dr. Pearce will present an illustrated lecture to the Friends of the MCZ on this complex topic on Tuesday, March 7, 1978.

CENTRAL CALIFORNIA KELP FOREST INHABITANTS



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a. A diver descends into the murky kelp forest to collect data.

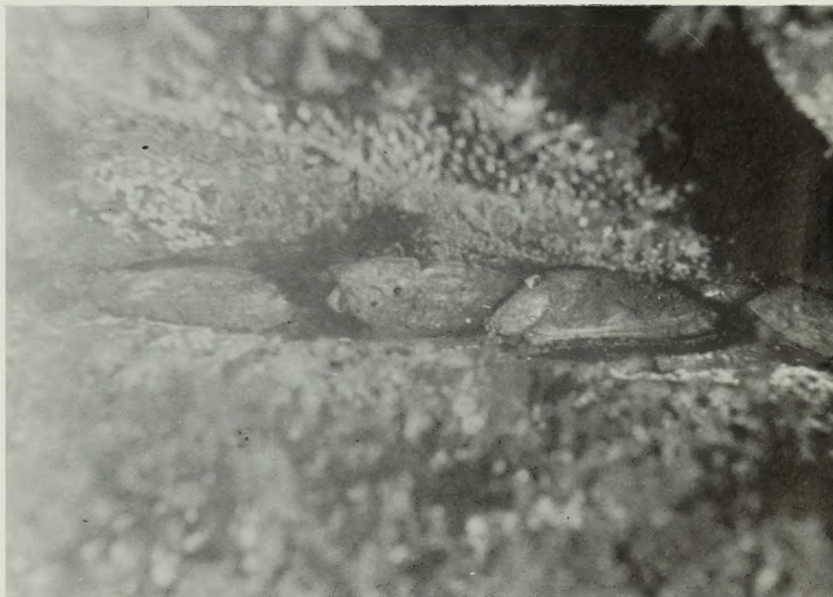
b. Giant kelp plants, the basis of a multi-million dollar industry, surrounded by rockfishes.

c. Sea urchins on the ocean floor.

d. Sea stars feeding on kelp. Abalone shell on right.

e. Abalones hiding in crack.

f. A sea otter with a sea urchin.

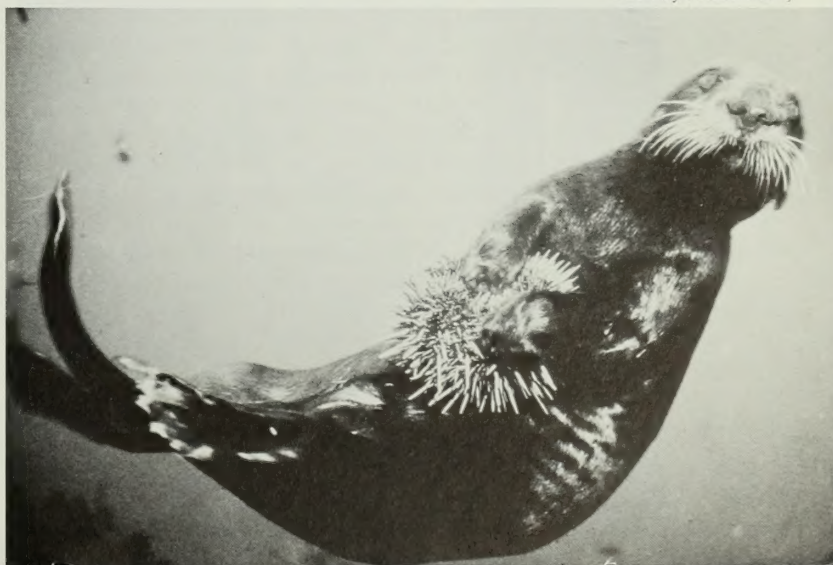


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Photo by R. Mattison f



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TWO FISH DEPARTMENT GRADUATE STUDENTS RECEIVE AWARDS

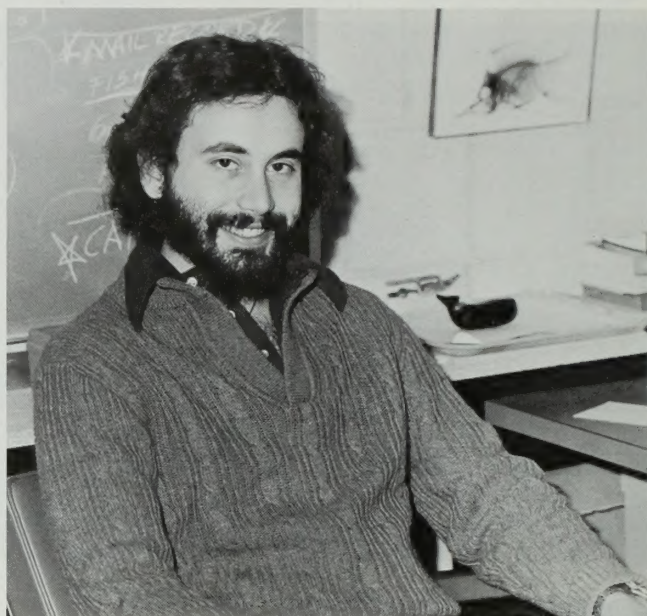
George Lauder wins top student prize



The D. Dwight Davis Prize in Vertebrate Morphology is awarded annually by the American Society of Zoologists "to recognize significant conceptual, observational and experimental contributions to the field of vertebrate morphology." This year, George Lauder, second-year graduate student, received the award for his presentation of his work on "Functional Anatomy and Mechanics of Feeding in Two Primitive Teleost Fishes" at the annual meeting of the American Society

of Zoologists in Toronto in December. According to his proud professor, Karel Liem, this was an especially significant year to achieve this honor since vertebrate morphology was heavily emphasized at the meetings and the competition was unusually severe.

Phillip Lobel receives NSF grant



Third-year graduate student Phillip Lobel has received an NSF Biological Oceanography "doctoral dissertation improvement award" of \$4,710 to support his research on the coral reef fishes of Hawaii and Fanning Island in the Pacific. This generous award will expedite Mr. Lobel's work on the ecology and evolution of coral reef fishes and their effect on the development of coral reef structure.

RUSSELL MITTERMEIER APPOINTED TO PRIMATE CONSERVATION POST

Dr. Russell A. Mittermeier, who has been a student at the MCZ since 1971 and recently completed his thesis on "Distribution, Synecology and Conservation of Surinam Monkeys," has been selected Chairman of the International Union for the Conservation of Nature's (IUCN) Survival Service Commission Primate Specialist Group. He is currently working on a Global Strategy for Primate Conservation. The main aim of the IUCN Primate Specialist Group is to maintain the current diversity of primates by preventing the extinction of vulnerable and endangered species and by providing effective protection for large numbers of primates in areas of high diversity and/or abundance. The Global Strategy that Dr. Mittermeier is organizing includes some 70 projects for Africa, Asia, and South America, and is primarily intended to determine the conservation status of primates all over the world, to

locate sites for new parks and reserves and to assess the conservation potential of existing ones, and to develop conservation education programs in the countries in which primates occur. The Global Strategy also represents an attempt to unify and strengthen primate conservation activities and to attract the attention of international funding organizations and government agencies.

Employed by the New York Zoological Society and the World Wildlife Fund, Dr. Mittermeier is setting up an office at Stony Brook, where he also has a position as Adjunct Assistant Professor. However, his primate conservation activities will keep him mainly in the field over the next few years. After leading an MCZ tour to Surinam in April, he will spend about three months completing the final details of his thesis project at the Raleighvallen-Voltzberg Nature Reserve in Surinam. He then plans to initiate a conservation project in Brazil on endangered species like the golden lion tamarins and the woolly spider monkey and another one on the proboscis monkey in Sarawak (northern Borneo) early next year.

TWO VISITORS FROM ISRAEL

Professor Joseph Shepherd



Professor Joseph Shepherd of the Department of Sociology and Anthropology, Haifa University, is spending his sabbatical year here to take part in the intense intellectual activity generated by Harvard's diverse sociobiology group (including Professors Wilson, Trivers, DeVore, and others). According to Dr. Shepherd, "The stimuli are so numerous and overwhelming that if you want to write too, 24 hours are not enough in one day!" The writing Dr. Shepherd is attempting to do involves his latest work on the role of male dominance in human sexual functioning. He is also working on a new book on the origin of the human pair bond.

Professor Shepherd is well known for his studies of human behavior in a tailor-made research setting—the Israeli kibbutz. As founder and long-time member of one of these communal villages, Dr. Shepherd has concentrated on two questions: a) What causes the natural avoidance of sexual relationship among people who have been reared together? and b) How do women respond to the freedom from traditional roles which is basic to the egalitarian structure of the kibbutz?

Investigation of the first question revealed that early intimacy—particularly during the first six years—discourages later marriage to partners within the kibbutz and "kibbutzniks" usually go outside of the kibbutz to marry. Since this phenomenon is hard to explain by social factors, there must be a biological explanation. Subsequent studies showed that this pattern is also true in several groups of animal species.

The second question has resulted in a book, *Women in the Kibbutz* with Lionel Tiger (1975), which reports the finding that, although the household tasks were equally divided between the sexes at the outset in the 1920's, as women bore more children in the 1940's, they assumed more of the nurturing role, including household chores. Dr. Shepherd views this phenomenon as both confirmation of the closer link of the child to the mother than to the father (as he puts it: "I love my children very much but they were never in my body,")

and the indication of the biological predisposition to division of labor between the sexes. He found that although men are making great effort to transfer authority to women, the latter are loathe to accept it.

This interpretation has led to his current study of whether male dominance is essential to successful human sexual relations. The research team consists of three other professionals including a clinical psychologist (who is also a feminist), a medical doctor whose specialty is gynecology, a sociologist, and Dr. Shepherd, the anthropologist. Thus, four disciplines are being brought to bear on this intriguing question. The sample of 150 couples who are attending Israel's only sex clinic is the largest ever studied. They are being compared with 60 couples who claim to have normal sexual functioning. Undoubtedly, the results of this work will be controversial, as is the whole area of human behavior.

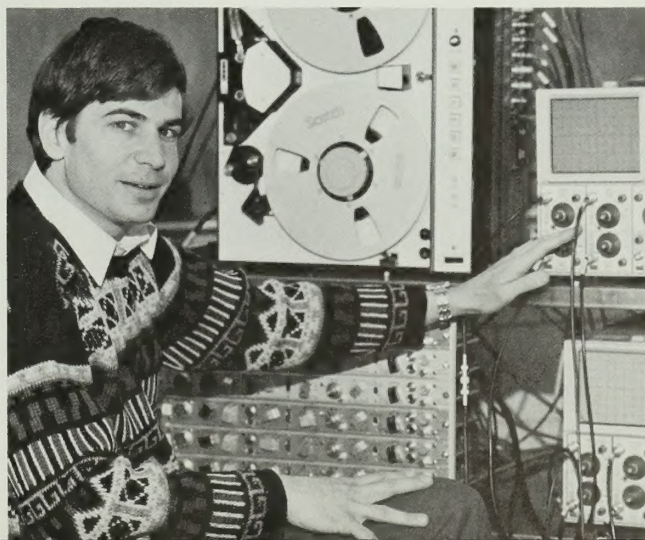
Dr. Uri Oron

Dr. Uri Oron, currently a teaching assistant and research associate, is at the MCZ for two years in order to expand his scientific repertoire and hopefully increase his marketability when he returns to the University of Tel-Aviv in his native Israel. Since the current academic job shortage in the sciences is certainly not limited to the United States (in fact, the supersaturation of scholars is far worse in Israel) following his Department Chairman's advice and switching from cell biology and biochemistry to functional morphology could make a crucial difference to Dr. Oron's future employment possibilities.

The Department of Zoology at Tel-Aviv is planning to introduce a course on the structure and function of vertebrates; Dr. Oron, who brought his wife and two young children with him, is currently assisting in the laboratories for this course (Biology 21) here at Harvard. He is also conducting research on locomotion and mastication in vertebrates with Professors C. R. Taylor and A. W. Crompton.

Growing up in a country where, as Dr. Oron puts it, "even your life is not safe" has made Dr. Oron philosophical about his future. A veteran of two wars, he is firmly committed to living in Israel, whether or not this includes employment in academic research and teaching.

Dr. Uri Oron with the electromyographic equipment he is using to chart mastication in Madagascan tenrecs with Professor A. W. Crompton.



JOSE ROSADO, NEW CURATORIAL ASSOCIATE IN HERPETOLOGY



If the random sampling of researchers of natural history who visit or populate the MCZ can be taken as a reliable indicator, the American Museum of Natural History in New York City seems to be a hatching

ground of a large proportion of those now actively employed in this field. Jose Rosado, who became the MCZ's Curatorial Associate in Herpetology last July, acquired and developed his interest in animals in general and snakes, lizards, and frogs, in particular, during childhood visits to his native New York's renowned museum. He aspired to become a professor or curator like the ones he saw walking around in the exhibit halls.

While still in high school, Mr. Rosado started working at the American Museum as part-time office boy and photographer and was a convenient candidate when an opening occurred in the Herpetological Information Search Systems area. He gained experience as a reference "librarian" to the Herpetology collections. Later, as an undergraduate student at City College of the City University of New York, he was able to arrange his work-study experience in the Herpetology Laboratory and upon completing his B.S. in Biology in January, 1975, assumed a full-time position as Curatorial Assistant.

Since arriving at the MCZ, Mr. Rosado has not only taken over the entire operation of a busy department but has also been in charge of converting a former unsightly basement storage area into a streamlined new office and research lab. Mr. Rosado plans to take advantage of being here at Harvard to continue his education.

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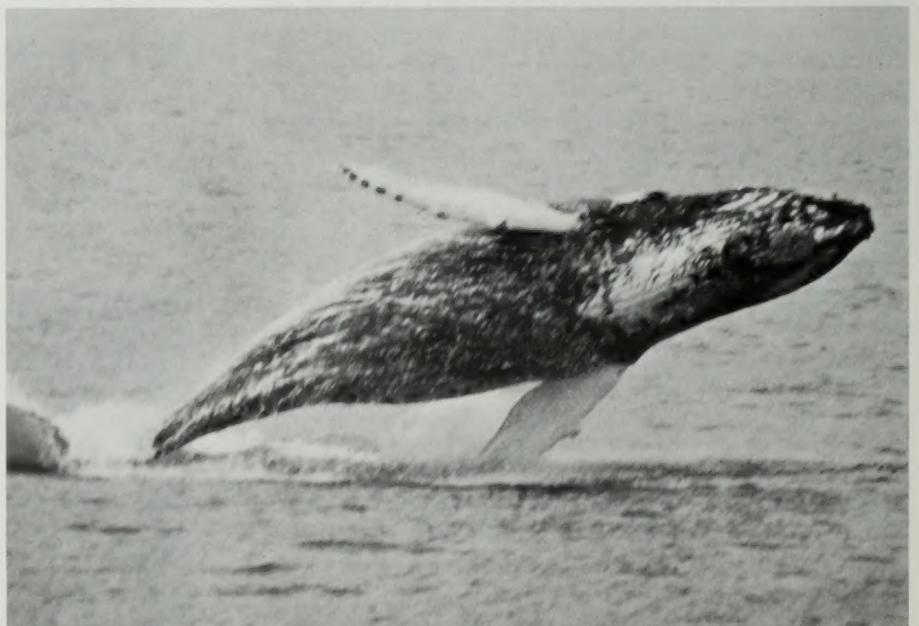
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TWO PROVINCETOWN WEEK ENDS PLANNED FOR SPRING

The Friends of the MCZ will again go to Provincetown this Spring (April 15, 16 and June 3, 4) to see humpback and finback whales. On the April weekend there is also a good possibility of seeing right whales. Reservations are being accepted on a first-come first-serve basis. Call (617) 495-2463 for more information.

We're hoping to see this again this year! This breaching humpback off Provincetown was captured on film by Frank Gardner on the Friends of the MCZ June 4, 1977 whale watching trip aboard the Dolphin III.



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